

CLAIMS

1. A method of manufacturing a wheel rim (10) from a plate-like blank (11), comprising the steps of:

5 curving said blank (11);

forming a hollow cylindrical body (12) by bringing end faces (30, 32) of the blank into abutment against each other;

10 forming a recess (16) depressed from a curved outer circumferential wall (14) of said hollow cylindrical body

(12) toward an inner circumferential wall (15) thereof;

15 forming curled portions (18) on opposite ends of said hollow cylindrical body (12) by bending a circular end face (34) of said hollow cylindrical body (12) with said recess (16) formed therein toward another circular end face (36) thereof; and

20 forming hump portions (20) by pressing regions near said curled portions (18) of said hollow cylindrical body (12) with said curled portions (18) on the opposite ends thereof, from said inner circumferential wall (15) to raise said outer circumferential wall (14).

25 2. A method according to claim 1, wherein said step of forming said curled portions (18) comprises the first curling step of forming said end faces into respective curved shapes, and the second curling step of forming the curved shapes into rectangular shapes.

3. A method according to claim 2, wherein said first curling step is performed by a pressing process and said second curling step is performed by a spinning process.

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4. A method according to claim 3, wherein in said first curling step, a side wall surface of said recess (16) is supported and said end face (34) of said hollow cylindrical body (12) near said side wall surface is curled, and thereafter another side wall surface of said recess (16) is supported and said end face (36) of said hollow cylindrical body (12) near said other side wall surface is curled.

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5. A method according to claim 1, wherein said step of forming a hollow cylindrical body (12) is performed by friction stir welding.

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6. A method according to claim 1, wherein through holes (22) are formed in said curled portions (18) and said recess (16) after said step of forming said hump portions (20).

7. A method of manufacturing a wheel rim (10) by bringing end faces of a workpiece (11) into abutment against each other to form a hollow cylindrical body (12) and forming a circumferential recess (16) which is depressed from an outer circumferential wall (14) of said hollow cylindrical body (12) toward an inner circumferential wall

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(15) thereof, said method comprising the steps of providing protrusions (27, 28) disposed near ends of a joined area of said hollow cylindrical body (12) and extending in a joining direction, and then pressing said outer circumferential wall (14) of said hollow cylindrical body (12) to form said recess (16).

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8. A method according to claim 7, wherein fingers (26a through 26d) are formed on respective corners of said workpiece (11) and joined to form said protrusions (27, 28).

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9. A method according to claim 7, wherein said hollow cylindrical body (12) is cut circumferentially to form said protrusions (27, 28).

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10. A method according to claim 7, wherein abutting edges of said hollow cylindrical body (12) are joined to each other by friction stir welding.

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11. A method according to claim 7, wherein said recess (16) is formed by a spinning process or a roll forming process.

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12. A wheel (122) for supporting a vehicular tire fitted thereover, comprising:

a wheel rim (10) formed as a hollow cylinder from a plate-like blank (11); and

a wheel disk (102) formed from a plate-like blank (11),
said wheel disk (102) having a peripheral edge portion (119)
bent substantially parallel to the central axis of rotation
of said wheel (122) and a slanted surface (119b) beveled
5 from an end face of said peripheral edge portion (119)
toward said central axis of rotation;

wherein a welded bead (700) is formed from an inner
side surface of said wheel rim (10) to said slanted surface
(119b) of said wheel disk (102), said wheel rim (10) and
10 said wheel disk (102) being joined to each other.

13. A wheel (122) according to claim 12, wherein said
slanted surface (119b) of said wheel disk (102) is tilted at
an acute angle of 45° or greater with respect to said
15 central axis of rotation of said wheel (122).

14. A method of manufacturing a wheel (122) for
supporting a vehicular tire fitted thereover, said wheel
(122) comprising:

20 a wheel rim (10) formed as a hollow cylinder from a
plate-like blank (11); and

a wheel disk (102) formed from a plate-like blank (11),
said wheel disk (102) having a peripheral edge portion (119)
bent substantially parallel to the central axis of rotation
of said wheel (122) and a slanted surface (119b) beveled
25 from an end face of said peripheral edge portion (119)
toward said central axis of rotation;

5 said method comprising the steps of placing a pressure-fitted product (100) in which said peripheral edge portion (119) of said wheel disk (102) is press-fitted into an inner side surface of said wheel rim (10), holding said pressure-fitted product (100) such that said slanted surface (119b) of said wheel disk (102) is substantially horizontal, and thereafter welding said wheel rim (10) to said slanted surface (119b) to form a welded bead (700) thereby to join said wheel rim (10) and said wheel disk (102) to each other.

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15. A method according to claim 14, wherein said pressure-fitted product (100) is held such that said slanted surface (119b) of said wheel disk (102) is more tilted toward said wheel rim (10).